

ABSTRACT OF THE DISCLOSURE

An apparatus for processing and observing a sample has a sample stage for supporting a sample at a preselected location thereof, a focused ion beam irradiation system for irradiating the sample with a focused ion beam along an optical axis to cut out a portion from the sample, and a side entry stage disposed over the sample stage and extending slantingly with respect to the optical axis of the focused ion beam irradiated by the focused ion beam irradiation system. The side entry stage has a microscope sample holder for picking up the cut-out sample portion directly from the preselected location of the sample and for supporting the sample portion. The microscope sample holder is configured to be removed from the side entry stage while supporting the sample portion and to be connected to an entry stage of a microscope device for observing the sample portion.